irregularity exists in the numerical results; but whether these arise from irregularities in the distribution of the terrestrial magnetism, or from any active agency of a volcanic nature, or other cause, the author does not venture to decide.

January 31, 1833.

JOHN WILLIAM LUBBOCK, Esq. M.A., V.P. and Treasurer, in the Chair.

A paper was read, entitled, "An experimental Inquiry into the Treatment of Tic Douloureux." By W. R. Whatton, Esq. F.S.A. M.R.C.S. Communicated by P. M. Roget, M.D. Sec. R.S.

The author, after giving a brief account of the history of neuralgia facialis, and of the opinions that have been entertained of its nature, states the results of his trials of morphia applied to the skin, when denuded of cuticle by the previous application of a blister. The form he usually employs is that of a cerate, composed of eight grains of the acetate of morphia, finely powdered, to an ounce of simple ointment or lard, one dram of which is applied every eight hours. After a few weeks the proportion of the acetate is doubled, and occasionally, in very severe cases, a cerate, containing twenty or twenty-four grains in the ounce, was used. He relates a number of cases in which this treatment was perfectly successful in curing the disease, even when it had been of long standing, and had resisted every other mode of treatment.

February 7, 1833.

WILLIAM GEORGE MATON, M.D., Vice-President, in the Chair.

The Very Rev. George Chandler, D.D., Dean of Chichester; Woronzow Greig, Esq. M.A.; and the Rev. Frederick Nolan, LL.D.; were elected Fellows of the Society.

A paper was read, entitled, "On the relation which subsists between the Nervous and Muscular Systems in the more perfect Animals, and the nature of the Influence by which it is maintained." By A. P. W. Philip, M.D., F.R.S. L. & E.

The author, after referring to his former papers which have at different times been read to the Royal Society, and published in their Transactions, is led to view the brain and spinal marrow as the only active parts of the nervous system; the nerves, whether belonging to the class of cerebral or ganglionic, together with their plexuses and ganglions, serving only as the means of conveying and combining the various parts of the former organs, and therefore being passive with reference to their functions. This view of the subject is directly opposed to that which has been adopted by many physiologists, who consider these ganglions as the sources, and not the mere vehicles, of nervous influence. In order to determine this point, the author made the following experiment on an animal that had been pithed

so as to destroy its sensibility, while the action of the heart continued. Under these circumstances, he applied mechanical irritation, and also various chemical agents, to the ganglions and plexuses of the ganglionic nerves, and found that the heart continued to beat with the same regularity as before, and with the same frequency of pulsation. From these and other observations, the author concludes that the ganglionic system of nerves, with their plexuses and ganglions, performs the office of combining the influence of every part of the brain and spinal marrow, and of bestowing it on the muscles of involuntary motion, these muscles being subservient to those functions of life which require that combined influence; that the manner in which the influence of these organs affects the muscular fibre is not essentially different from that of other stimulants and sedatives; and that this influence is not an agent peculiar to the nervous system, but is capable of existing elsewhere, and is consequently not a vital power, properly so called; a conclusion which appears to him to be confirmed from the circumstance that galvanism is capable of performing all its functions. Hence he infers that the brain and spinal marrow, far from bestowing on the muscular fibre its peculiar power, only supplies an inanimate agent, which, like all other such agents, capable of affecting it, acts on it either as a stimulant or sedative, according to the degree in which it is applied, and is identical with the galvanic influence.

February 14, 1833.

The Rev. WILLIAM BUCKLAND, D.D., Vice-President, in the Chair.

A paper was read, entitled, "On the Existence of four distinct Hearts, having regular Pulsations, connected with the Lymphatic System, in certain Amphibious Animals." By John Müller, M.D., Professor of Physiology in the University of Bonn. Communicated by Leonard Horner, Esq., F.R.S.

The author had long ago observed, that, in frogs, there exists, immediately under the skin, large spaces containing lymph, whence it can be readily collected by making incisions through the skin. These receptacles for lymph are larger in the frog than in the other amphibia: but all the animals of this class appear, from the observations of the author, to be also provided with remarkable pulsating organs, which propel the lymph in the lymphatic vessels, in the same way as the heart propels the blood circulating in the arterial system. In the frog, two of these lymphatic hearts are situated behind the joint of the hip, and immediately underneath the skin. Their contractions are performed with regularity, and may be seen through the skin; but they are not synchronous either with the motions of the heart, or with those of the lungs, and they continue after the removal of the heart, and even after the dismemberment of the animal. The pulsations of these two organs on the right and left side are not performed at the same time, but often alternate at irregular intervals.